

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof.
2. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 60% of the activity of non-detoxified neuraminidase.
3. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 70% of the activity of non-detoxified neuraminidase.
4. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 80% of the activity of non-detoxified neuraminidase.
5. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 90% of the activity of non-detoxified neuraminidase.
6. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase.
7. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 60% of the activity of non-detoxified neuraminidase.
8. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring

- amino acids of non-detoxified neuraminidase and exhibits approximately 70% of the activity of non-detoxified neuraminidase.
9. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 80% of the activity of non-detoxified neuraminidase.
  10. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 90% of the activity of non-detoxified neuraminidase.
  11. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 5 N-terminal amino acids of non-detoxified neuraminidase.
  12. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 10 N-terminal amino acids of non-detoxified neuraminidase.
  13. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 15 N-terminal amino acids of non-detoxified neuraminidase.
  14. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 10% of the C-terminal amino acids of non-detoxified neuraminidase.
  15. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 20% of the C-terminal amino acids of non-detoxified neuraminidase.
  16. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 30% of the C-terminal amino acids of non-detoxified neuraminidase.

17. (Original) A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 35% of the C-terminal amino acids of non-detoxified neuraminidase.
18. (Original) A composition comprising a detoxified pneumococcal neuraminidase or an antigenic portion thereof and a pharmaceutically acceptable carrier.
19. (Original) The composition of claim 18, further comprising an adjuvant.
20. (Original) A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
21. (Original) A method of reducing pneumococcal nasal carriage in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
22. (Original) A method of preventing pneumococcal infection in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
23. (Currently Amended) The method of claim 22 , wherein the ~~pneucococcal~~ pneumococcal infection is meningitis.
24. (Currently Amended) The method of claim 22 , wherein the ~~pneucococcal~~ pneumococcal infection is otitis media.
25. (Currently Amended) The method of claim 22 , wherein the ~~pneucococcal~~ pneumococcal infection is pneumonia.
26. (Currently Amended) The method of claim 22 , wherein the ~~pneucococcal~~ pneumococcal infection is hemolytic uremia.
27. (Currently Amended) A method of reducing or preventing pneumococcal nasal carriage in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic fragment thereof under conditions that reduce or prevent the nasal carriage.

28. (Currently Amended) A method of reducing or preventing pneumococcal infection in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic fragment thereof under conditions that reduce or prevent the infection.
29. (Currently Amended) The method of claim 28 , wherein the ~~pneucoccccal~~ pneumococcal infection is meningitis.
30. (Currently Amended) The method of claim 28 , wherein the ~~pneucoccccal~~ pneumococcal infection is otitis media.
31. (Currently Amended) The method of claim 28 , wherein the ~~pneucoccccal~~ pneumococcal infection is pneumonia.
32. (Currently Amended) The method of claim 28 , wherein the ~~pneucoccccal~~ pneumococcal infection is hemolytic uremia.
33. (Original) A method of reducing or preventing pneumococcal infection in a subject comprising administering to the subject a pneumococcal neuraminidase antibody or a fragment thereof under conditions that reduce or prevent the infection, wherein the administration step comprises contacting a mucosal surface of the subject with the antibody.
34. (Currently Amended) The method of claim 33 , wherein the ~~pneucoccccal~~ pneumococcal infection is meningitis.
35. (Currently Amended) The method of claim 33 , wherein the ~~pneucoccccal~~ pneumococcal infection is otitis media.
36. (Currently Amended) The method of claim 33 , wherein the ~~pneucoccccal~~ pneumococcal infection is pneumonia.
37. (Currently Amended) The method of claim 33 , wherein the ~~pneucoccccal~~ pneumococcal infection is hemolytic uremia.
38. (Currently Amended) A composition comprising a detoxified pneumococcal neuraminidase or an antigenic portion thereof and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.

39. (Original) The composition of claim 38, wherein the composition is a nasal spray.
40. (Original) The composition of claim 38, wherein the composition is a nebulizer solution.
41. (Original) The composition of claim 38, wherein the composition is an aerosol inhalant.
42. (Original) A container comprising the composition of claim 38.
43. (Original) The container of claim 42, wherein the container is a nasal sprayer.
44. (Original) The container of claim 42, wherein the container is a nebulizer.
45. (Original) The container of claim 42, wherein the container is an inhaler.
46. (Original) A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
47. (Original) A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
48. (Original) A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
49. (Currently Amended) The method of claim 48 , wherein the ~~pneucoccccal~~ pneumococcal infection is meningitis.
50. (Currently Amended) The method of claim 48 , wherein the ~~pneucoccccal~~ pneumococcal infection is otitis media.
51. (Currently Amended) The method of claim 48 , wherein the ~~pneucoccccal~~ pneumococcal infection is pneumonia.
52. (Currently Amended) The method of claim 48 , wherein the ~~pneucoccccal~~ pneumococcal infection is hemolytic uremia.
53. (Original) A composition comprising a phosphocholine or an antigenic portion thereof of pneumococcal teichoic acid or pneumococcal lipoteichoic acid and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.

54. (Original) The composition of claim 53, wherein the composition is a nasal spray.
55. (Original) The composition of claim 53, wherein the composition is a nebulizer solution.
56. (Original) The composition of claim 53, wherein the composition is an aerosol inhalant.
57. (Original) A container comprising the composition of claim 53.
58. (Original) The container of claim 57, wherein the container is a nasal sprayer.
59. (Original) The container of claim 57, wherein the container is a nebulizer.
60. (Original) The container of claim 57, wherein the container is an inhaler.
61. (Original) A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 53.
62. (Original) A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 53.
63. (Original) A method of reducing or preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 53.
64. (Currently Amended) The method of claim 63 , wherein the ~~pneueeeeeeeal~~ pneumococcal infection is meningitis.
65. (Currently Amended) The method of claim 63 , wherein the ~~pneueeeeeeeal~~ pneumococcal infection is otitis media.
66. (Currently Amended) The method of claim 63 , wherein the ~~pneueeeeeeeal~~ pneumococcal infection is pneumonia.
67. (Currently Amended) The method of claim 63 , wherein the ~~pneueeeeeeeal~~ pneumococcal is hemolytic uremia.
68. (Currently Amended) The composition of claim 38, further comprising ~~A composition comprising a pneumococcal neuraminidase or an antigenic portion thereof, a phosphocholine or an antigenic portion thereof of pneumococcal teichoic acid or pneumococcal lipoteichoic acid, and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.~~
69. (Original) The composition of claim 68, wherein the composition is a nasal spray.

70. (Original) The composition of claim 68, wherein the composition is a nebulizer solution.
71. (Original) The composition of claim 68, wherein the composition is an aerosol inhalant.
72. (Original) A container comprising the composition of claim 68.
73. (Original) The container of claim 72, wherein the container is a nasal sprayer.
74. (Original) The container of claim 72, wherein the container is a nebulizer.
75. (Original) The container of claim 72, wherein the container is an inhaler.
76. (Original) A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 68.
77. (Original) A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 68.
78. (Original) A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 68.
79. (Currently Amended) The method of claim 78 , wherein the ~~pneucoccccal~~ pneumococcal infection is meningitis.
80. (Currently Amended) The method of claim 78 , wherein the ~~pneucoccccal~~ pneumococcal infection is otitis media.
81. (Currently Amended) The method of claim 78 , wherein the ~~pneucoccccal~~ pneumococcal infection is pneumonia.
82. (Currently Amended) The method of claim 78 , wherein the ~~pneucoccccal~~ pneumococcal infection is hemolytic uremia.
83. (Original) A composition comprising a non-phosphocholine antigenic portion of pneumococcal teichoic acid or pneumococcal lipoteichoic acid and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.
84. (Original) The composition of claim 83, wherein the composition is a nasal spray.
85. (Original) The composition of claim 83, wherein the composition is a nebulizer solution.
86. (Original) The composition of claim 83, wherein the composition is an aerosol inhalant.

87. (Original) A container comprising the composition of claim 83.
88. (Original) The container of claim 87, wherein the container is a nasal sprayer.
89. (Original) The container of claim 87, wherein the container is a nebulizer.
90. (Original) The container of claim 87, wherein the container is an inhaler.
91. (Original) A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 83.
92. (Original) A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 83.
93. (Original) A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 83.
94. (Currently Amended) The method of claim 93, wherein the ~~pneueeececal~~ pneumococcal infection is meningitis.
95. (Currently Amended) The method of claim 93 , wherein the ~~pneueeececal~~ pneumococcal infection is otitis media.
96. (Currently Amended) The method of claim 93 , wherein the ~~pneueeececal~~ pneumococcal infection is pneumonia.
97. (Currently Amended) The method of claim 93 , wherein the ~~pneueeececal~~ pneumococcal infection is hemolytic uremia.
98. (Currently Amended) The composition of claim 38, further comprising ~~A composition comprising a pneueeececal neuraminidase or an antigenic portion thereof;~~ a non-phosphocholine antigenic portion of pneumococcal teichoic acid or pneumococcal lipoteichoic acid, ~~and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.~~
99. (Original) The composition of claim 98, wherein the composition is a nasal spray.
100. (Original) The composition of claim 98, wherein the composition is a nebulizer solution.
101. (Original) The composition of claim 98, wherein the composition is an aerosol inhalant.
102. (Original) A container comprising the composition of claim 98.



103. (Original) The container of claim 102, wherein the container is a nasal sprayer.
104. (Original) The container of claim 102, wherein the container is a nebulizer.
105. (Original) The container of claim 102, wherein the container is an inhaler.
106. (Original) A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 98.
107. (Original) A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 98.
108. (Original) A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 98.
109. (Currently Amended) The method of claim 108, wherein the ~~pneucococcal~~ pneumococcal infection is meningitis.
110. (Currently Amended) The method of claim 108, wherein the ~~pneucococcal~~ pneumococcal infection is otitis media.
111. (Currently Amended) The method of claim 108, wherein the ~~pneucococcal~~ pneumococcal infection is pneumonia.
112. (Currently Amended) The method of claim 108, wherein the ~~pneucococcal~~ pneumococcal infection is hemolytic uremia.
113. (Original) A composition comprising a phosphocholine antibody or a fragment thereof and a pharmaceutically acceptable carrier.
114. (Original) The composition of claim 113, wherein the composition is suitable for administration to a mucosal surface.
115. (Original) The composition of claim 113, wherein the composition is a nasal spray.
116. (Original) The composition of claim 113, wherein the composition is a nebulizer solution.
117. (Original) The composition of claim 113, wherein the composition is an aerosol inhalant.
118. (Original) A container comprising the composition of claim 113.
119. (Original) The container of claim 118, wherein the container is a nasal sprayer.
120. (Original) The container of claim 118, wherein the container is a nebulizer.

121. (Original) The container of claim 118, wherein the container is an inhaler.
122. (Original) A method of reducing pneumococcal nasal damage in a subject comprising administering to the subject a phosphocholine antibody or a fragment thereof.
123. (Original) The method of claim 122, wherein the administration comprising contacting the nasal mucosa of the subject with the antibody or fragment thereof.
124. (Original) A method of preventing pneumococcal infection in a subject comprising administering to the subject a phosphocholine antibody or a fragment thereof.
125. (Original) The method of claim 124, wherein the administration comprises contacting the nasal mucosa of the subject with the antibody or fragment thereof.